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Femtosecond photon echo and four-wave mixing in dye-doped polymer films, semiconductors and heterostructures

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Abstract

A review of femtosecond experiments on photon echo (PE) and four-wave mixing (FWM) performed at room temperature is presented. The Weiner-Ippen technique of FWM spectroscopy is demonstrated in dye-doped polymer films (such as polyvinilbutural doped with phthalocyanine), semiconductors (CdS) and heterostructures (GaAs/AlGaAs). The experimental setup used in these experiments is described. The dephasing times are estimated and the relaxation mechanisms are discussed. © 2014 Astro Ltd.

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Keywords

Photon echo, Relaxation mechanism, Weiner-ippen technique